

CO 1-hour and 8-hour concentrations of 2.7 parts per million (ppm) and 2.0 ppm, respectively, were used for background concentrations in the analysis. These values were reported as average ambient background concentrations in the Forsyth County area by the EPA for 2007.

Microscale CO projections were made using the EPA-approved MOBILE6.2 and CAL3QHC (Version 2.0) computer models. MOBILE6.2 was used to determine CO emission factors which in turn were used in the CAL3QHC model to generate CO concentrations. CAL3QHC is a versatile dispersion model which predicts CO concentration for roadway segments and/or intersections. It utilizes CALINE3 for all concentration computations.

Analysis Results

Table 4-3 lists the predicted one-hour and eight-hour carbon monoxide concentrations for the No-Build and Build Alternatives for receptors located at the right-of-way line. In comparing the projected CO concentration levels in Table 4-4 with the National Ambient Air Quality Standards, no violations of the 1-hour standard (35 ppm) or 8-hour standard (9 ppm) are expected. The 1-hour and 8-hour CO concentrations are not expected to exceed 3.7 and 2.8 ppm (including background contributions), respectively, at any of the sites for any of the three years investigated.

TABLE 4-3: AIR QUALITY ANALYSIS RESULTS

1-Hour Concentrations for Alternative 3 – Gum Tree Road Intersection*													
Year	Analysis Site												
	1	2	3	4	5	6	7	8	9	10	11	12	
2015	3.1	3.1	3.0	3.1	3.3	3.2	3.0	3.0	3.1	3.1	3.1	3.2	
2025	3.2	3.2	3.0	3.2	3.4	3.3	3.1	3.0	3.2	3.2	3.2	3.2	
2035	3.4	3.4	3.7	3.6	3.5	3.5	3.5	3.5	3.3	3.3	3.3	3.4	
1-Hour Concentrations for Alternative 3 – Shady Grove Church Road Intersection*													
Year	Analysis Site												
	1	2	3	4	5		6	7	8	9			
2015	3.0	3.0	2.9	2.9	2.9		2.9	2.9	2.9	3.0			
2025	3.1	3.0	2.9	2.9	3.0		2.9	3.0	3.0	3.1			
2035	3.3	3.1	3.1	3.0	3.1		3.1	3.1	3.2	3.2			
8-Hour Concentrations for Alternative 3 – Gum Tree Road Intersection^													
Year	Analysis Site												
	1	2	3	4	5	6	7	8	9	10	11	12	
2015	2.3	2.3	2.2	2.3	2.5	2.4	2.2	2.2	2.3	2.3	2.3	2.4	
2025	2.4	2.4	2.2	2.4	2.6	2.5	2.3	2.2	2.4	2.4	2.4	2.4	
2035	2.6	2.6	2.6	2.8	2.7	2.7	2.7	2.7	2.5	2.5	2.5	2.6	
8-Hour Concentrations for Alternative 3 – Shady Grove Church Road Intersection ^													
Year	Analysis Site												
	1	2	3	4	5	6	7	8	9				
2015	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2			
2025	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3			
2035	2.5	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.4	2.4			

* Includes 2.7ppm background concentration

^ Includes 2.0ppm background concentration